

DOCKET NO. D-2004-004 CP-3

DELAWARE RIVER BASIN COMMISSION

**Southeastern Pennsylvania
Ground Water Protected Area**

**Audubon Water Company
Groundwater Withdrawal
Lower Providence Township, Montgomery County, Pennsylvania**

PROCEEDINGS

This docket is issued in response to an Application submitted by West Brandywine Environmental, Inc. on behalf of Audubon Water Company (AWC) to the Delaware River Basin Commission (DRBC or Commission) on November 4, 2010 (Application), for a renewal and approval of an allocation of groundwater and review of a groundwater withdrawal project in the Ground Water Protected Area of Southeastern Pennsylvania. The prior docket was approved by the Commission on December 10, 2008. The project well (Well No. TP-4) was reviewed under the Pennsylvania Safe Drinking Water Act for public water supply permits and approved by the Pennsylvania Department of Environmental Protection (PADEP) in correspondence dated April 24, 2012 to the Commission (Application No. 4612502) contingent on Commission approval.

The application was reviewed for continuation of the project in the Comprehensive Plan and approval under Section 3.8 and for a withdrawal permit under Section 10.3 of the *Delaware River Basin Compact*. The Montgomery County Planning Commission has been notified of pending action on this docket. A public hearing on this project was held by the DRBC on July 11, 2012.

A. DESCRIPTION

1. Purpose. The purpose of this project is to approve up to 1.395 million gallons per month (mgm) of groundwater to the docket holder's public water supply distribution system from new Well No. TP-4 and to retain the existing total allocation of 51.45 mgm. Audubon Water Company is not requesting an increase in groundwater withdrawal allocation.

2. Location. New Well No. TP-4 is located in the Schuylkill River Watershed in Lower Providence Township, Montgomery County, Pennsylvania. The 18 other project wells are located in the Perkiomen Creek and Schuylkill River Watersheds. New Well TP-4 is located in the Stockton Formation. The other Audubon Water Company wells are located in the Stockton and Lockatong Formations as shown in the table below in Section A.4.b.

Specific location information has been withheld for security reasons.

3. Area Served. The docket holder's water distribution system serves portions of Lower Providence Township, the new Shannondell Retirement Community and the Valley Forge Crossing Mobile Home Park as indicated on maps entitled "Audubon Water System Map" and "Valley Forge Crossing Street and Directory Map", as submitted with the application.

4. Physical features.

a. Design criteria. The Audubon Water Company currently serves an estimated population of 9,155 through 2,437 service connections with an average and maximum water demand of 32.82 mgm and 41.00 mgm, respectively. The docket holder projects an average and maximum water demand of 42.92 mgm and 49.91 mgm, respectively, with a population of 13,510 by the year 2016.

Audubon Water Company is seeking approval for Well No. TP-4 to help augment existing Well No. TP-1, Well No. TP-1 has a declining yield.

b. Facilities. The docket holder's existing wells have the following characteristics:

WELL NO.	DEPTH	CASED DEPTH/ CASING DIAMETER	PUMP CAPACITY	FORMATION	YEAR DRILLED
AWC-1	555'	37'8"	114 gpm	Stockton	1951/1997
AWC-2	440'	56'6"	102 gpm	Stockton	1959/1996
AWC-3	240'	40'6"	115 gpm	Stockton	1961
AWC-5	404'	38'8"	115 gpm	Stockton	1961
AWC-6	524'	60'8"	150 gpm	Stockton	1969
AWC-9	420'	60'8"	150 gpm	Stockton	1973
AWC-10	290'	28'6"	50 gpm	Lockatong	1972
AWC-11	400'	71'6"	50 gpm	Lockatong	1978
AWC-13	485'	94'10"	95 gpm	Stockton	1979
AWC-14	409'	50'10"	350 gpm	Stockton	2003
AWC-15	610'	63'10"	35 gpm	Lockatong	2005
Audubon Park Well	300'	Unknown/4"	35 gpm	Stockton	1950
VFCC-1	400'	91'8"	65 gpm	Stockton	1959
VFCC-2	420'	62'8"	225 gpm	Stockton	1960
VFCC-3	400'	55'8"	100 gpm	Stockton	1965
TP-1	302'	60'/Unknown	30 gpm	Stockton	1962
TP-2	156'	60'/Unknown	36 gpm	Stockton	1962
TP-3	216'	60'/Unknown	31 gpm	Stockton	1962
TP-4 (new)	561'	61' / 8"	35 gpm	Stockton	2009

In addition, Wells TP-1, TP-2 and TP-3 were known as Wells 1, 2 and 3 in the previous docket.

All wells and all water service connections are metered.

Well water is treated by chlorination prior to entering the distribution system. Water from existing Well No. AWC-14 is treated by chlorination and air stripping prior to entering the distribution system.

The project facilities are above the 100-year flood elevation.

The Audubon Water Company main distribution system has an interconnection with the Pennsylvania American Water Company with an interconnection capacity of 0.250 million gallons per day (mgd). The Valley Forge Crossing Mobile Home Park distribution system is not interconnected with any other distribution system.

c. **Other.** Wastewater is conveyed to the Lower Perkiomen Valley Regional Sewer Authority (LPVRS) treatment facility under NPDES Permit PA0026964. The LPVRS received a transfer of ownership on February 27, 2003 from the Montgomery County Sewer Authority, which received approval under Section 3.8 of the Compact by DRBC Docket No. D-87-6 CP on February 25, 1987. Wastewater from the Valley Forge Crossing Mobile Home Park is conveyed to the Valley Forge Crossing Mobile Home Park sewage treatment plant for discharge of 45,000 gallons per day to the Catfish Dam Creek under NPDES Permit No. PA0043966 dated September 17, 2007. The treatment facilities have adequate capacity to receive wastewater from the project.

d. **Cost.** The overall cost of this project is estimated to be \$104,500.

e. **Relationship to the Comprehensive Plan.** The docket holder's wells were previously included in the Comprehensive Plan by DRBC Docket Nos. D-65-136 CP, D-71-205 CP, D-72-155 CP, D-73-194 CP, D-78-77 CP, D-80-73 CP, D-92-47 CP, D-97-43 CP, D-2004-4 CP-1 and D-2004-4 CP-2.

B. FINDINGS

The project is located within the Southeastern Pennsylvania Ground Water Protected Area delineated by the DRBC pursuant to *Compact* Section 10.2. Tests conducted by the docket holder indicate the operation of this project will not create a local water shortage. The project is designed to conform to the requirements of the *Water Code*, *Water Quality Regulations* and *Ground Water Protected Area Regulations (GWPAR)* of the DRBC.

Review and analysis of the application pursuant to Section 6.D. of the *GWPAR* result in the following:

1. The withdrawal is consistent with the Commission's Comprehensive Plan and the policies and purposes of these regulations.
2. Opportunities to satisfy water requirements on a timely basis from existing available supplies and facilities have been explored and found infeasible.
3. The withdrawal, in conjunction with other withdrawals in the applicable ground water basin, should not exceed withdrawal limits of the ground water basin, aquifer or aquifer system.
4. The withdrawal should not significantly impair or reduce the flow of perennial streams in the area.
5. Existing ground and surface water withdrawals should not be adversely impacted, or will be otherwise assured of adequate supplies in accordance with the requirements of Section 10 of the *GWPAR*.
6. The withdrawal should not cause substantial, permanent adverse impact to the overlying environment.
7. The docket holder adopted and will implement conservation and management programs as required by Section 7 of the *GWPAR*.

Well No. TP-4 Pumping Test

On February 10-12, 2009, the docket holder conducted a long-term, constant rate pumping test to assess withdrawal capabilities of the Well No. TP-4. The pumping test also was conducted to assess the underlying aquifer characteristics, and potential impacts to the local hydrologic system. The average pumping rate of the test on Well No. TP-4 was 31.25 gallons per minute (gpm) as measured with a flow meter. Discharge from the pumping well was directed 200 feet away from the pumping well via a 6-inch, fitted plastic pipe to the street storm water inlet and from there to an intermittent creek bed to the Schuylkill River. Well No. TP-4 was pumped for a total period of 2,953 minutes (49.22 hours). A total of 92,288 gallons of groundwater were pumped during the constant rate pumping test.

Groundwater response monitoring was conducted in the pumping well (Well No. TP-4) and six additional monitoring wells. Well No. TP-1 located approximately 79.5 feet east of Well No. TP-4, observed a drawdown of 4.80 feet. Four additional observation wells were also monitored during the pump test, ranging between 650 and 1,100 feet from Well No. TP-4. The additional observation wells did not show impact from the pumping at well TP-4.

The starting water level in the pumping well was 60.09 feet below top of casing. At the end of pumping, the water level in the pumping well was 164.55 feet, for a drawdown of 104.46 feet.

At the end of the constant rate pumping test the monitoring wells indicated no adverse impact from the continuous pumping at Well No. TP-4.

The observed drawdown in Well No. TP-4 was used to calculate aquifer parameters to characterize the underlying aquifer. The estimated aquifer Transmissivity value for Well No. TP-4 was 512.9 ft²/day for the test rate of 31.25 gpm. Storativity values were calculated from monitoring well TP-1, estimated a Storativity value of 0.0022. Hydraulic Conductivity (K) was also calculated for Well No. TP-4 from the long-term pumping test data. The hydraulic conductivity value calculated using AQTESOLV software was 12.77 gpd/ft².

The DRBC has reviewed the hydrogeologic report for Well No. TP-4 pumping test. No adverse impacts are expected to occur to the local hydrologic system due to pumping from Well No. TP-4.

Water Audits for Public Water Supply Systems Serving Greater than 100,000 gpd

Section 2.1.8 of the Water Code states that it is the policy of the Commission to establish a standardized water audit methodology for owners of water supply systems serving the public to ensure accountability in the management of water resources. Voluntary Water Audits were encouraged for public water supply systems through December 31, 2011 (Section 2.1.8.B.). Effective January 1, 2012, the owners of each public water supply system are required to implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding AWWA guidance (Section 2.1.8.C). The results of the first annual water audit shall be submitted to the Commission by March 31, 2013. Subsequent annual water audits shall be submitted annually to the Commission by March 31 every year thereafter

Project Well Nos. AWC-1, AWC-2, AWC-6, AWC-9, AWC-10, AWC-11, AWC-13, AWC-14, Well No. AWC-15, and the Audubon Park Well are located in the Perkiomen-Lodal Creeks subbasin, where total net annual ground water withdrawal of 802 million gallons per year (mgy) is less than the withdrawal limit set in Section 6.I. of the *GWPAR* of 1,600 mgy. Project Well Nos. AWC-3, AWC-5, VFCC-1, VFCC-2, VFCC-3, TP-1, TP-2, TP-3 and TP-4 are located in the Schuylkill-Trout Creek subbasin, where total net annual ground water withdrawal of 1,207.68 mgy is less than the withdrawal limit set in Section 6.I. of *GWPAR* of 1,443 mgy but greater than the subbasin withdrawal stressed level (1,082 mgy). The docket holder is requesting a monthly allocation of 51.45 mgm, which equates to 617.40 mgy. The proposed withdrawals from the project wells, in conjunction with other withdrawals in the subbasin, are in accordance with the requirements of Section 6.I. of the *GWPAR*.

Since the docket holder has project wells located in a potentially stressed subbasin (Schuylkill-Trout Creek), the *GWPAR* specify in Section 6.K. that “applications for new or expanded ground water withdrawals must include one or more programs to mitigate the adverse impacts of the new or expanded ground water withdrawal”. The eligible programs are explained in Sections 6.K.1 through 6.K.5 of the *GWPAR* and in this docket’s DECISION Section C. II.t.1 through 5. The docket holder will need to successfully implement one or more of these programs for any future increase of ground water allocations in the Schuylkill-Trout Creek subbasin.

The project does not conflict with the Comprehensive Plan, and is designed to prevent substantial adverse impact to the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The DRBC estimates that the project withdrawals, used for the purpose of public water supply, result in a consumptive use of 10 percent of the total water use. The DRBC definition of consumptive use is defined in Article 5.5.1.D. of the *Administrative Manual – Part III – Basin Regulations – Water Supply Charges*.

C. DECISION

I. Effective on the approval date for Docket No. D-2004-004 CP-3 below:

a. The project described in Docket No. D-2004-4 CP-2 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-2004-004 CP-3; and

b. Docket No. D-2004-4 CP-2 is terminated and replaced by Docket No. D-2004-004 CP-3; and

c. The project and the appurtenant facilities described in the Section A “Physical Features” of this docket shall be added to the Comprehensive Plan.

II. The project as described in the Section A “Physical features” is approved pursuant to Section 3.8 of the *Compact* and is granted this withdrawal permit pursuant to Section 10.3 of the *Compact* and *GWPAR*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s. Within 60 days (September 11, 2012), the docket holder shall provide written confirmation to the Commission that it has registered and reported with PADEP all surface and groundwater sources described in this docket in accordance with the Pennsylvania Regulations (Title 25 - Environmental Protection, [25 PA. CODE CH. 110], Water Resources Planning).

b. The wells and operational records shall be available at all times for inspection by the DRBC.

c. The wells shall be operated at all times to comply with the requirements of the *Water Code* and *Water Quality Regulations* of the DRBC.

d. During any month period, the withdrawals from the following wells shall not exceed:

WELL NO.	INSTANTANEOUS ALLOCATION (GPM)	MONTHLY ALLOCATION (MILLION GALLONS)
AWC-1	114	5.084
AWC-2	102	4.547
AWC-3	115	5.133
AWC-5	115	5.133
AWC-6	150	6.696
AWC-9	150	6.696
AWC-10	50	2.232
AWC-11	50	2.232
AWC-13	95	4.237
AWC-14	350	15.624
AWC-15	35	1.56
Audubon Park Well	35	1.56
VFCC-1	65	2.90
VFCC-2	225	10.044
VFCC-3	100	4.464
TP-1	30	1.333
TP-2	36	1.60
TP-3	31	1.38
TP-4 (new)	31.25	1.395

In addition, the total withdrawal from all wells shall not exceed 51.45 mgm or 617.40 mgy. Well Nos. AWC-1, AWC-2, AWC-6, AWC-9, AWC-10, AWC-11, AWC-13, AWC-14, AWC-15 and the Audubon Park Well located in the Perkiomen-Lodal Creek subbasin shall not exceed 39.61 mgm or 475.32 mgy. Well Nos. AWC-3, AWC-5, VFCC-1, VFCC-2, VFCC-3, TP-1, TP-2, TP-3 and TP-4 located in the Schuylkill-Trout Creek subbasin shall not exceed 14.67 mgm or 176.04 mgy.

e. The new well shall be equipped with readily accessible capped ports and drop pipes so that water levels may be measured under all conditions. Existing wells are to be

similarly equipped, where possible, with readily accessible ports and drop pipes as repairs or modifications are made at each existing well.

f. The project withdrawals shall be metered with an automatic continuous recording device that measures to within 5 percent of actual flow. An exception to the 5 percent performance standard, but no greater than 10 percent, may be granted if maintenance of the 5 percent performance is not technically feasible or economically practicable. A record of daily withdrawals shall be maintained, and monthly totals shall be reported annually by March 31, to the Bureau of Watershed Management, PADEP. Withdrawal records shall be available at any time to the Commission if requested by the Executive Director.

g. Each new water service connection shall include a water meter in accordance with the DRBC's Resolution No. 87-7 (Revised).

h. The docket holder shall continue to implement its Water Conservation Plan as approved by PADEP, and shall report to the PADEP on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

i. No water service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

j. The docket holder shall implement to the satisfaction of the Bureau of Watershed Management, PADEP, a drought or other water supply emergency plan.

k. In accordance with DRBC Resolutions No. 87-6 (Revised) and No. 2009-1, the docket holder shall continue to implement to the satisfaction of the Bureau of Watershed Management and the PADEP, the systematic program to monitor and control leakage within the water supply system. The program shall at a minimum include: periodic surveys to monitor leakage, enumerate non-revenue water and determine the current status of system infrastructure; recommendations to monitor and control leakage; and a schedule for the implementation of such recommendations. The docket holder shall proceed expeditiously to correct leakages and unnecessary usage identified by the program.

l. In accordance with DRBC Resolution No. 2009-1 and Section 2.1.8 of the Water Code, the docket holder shall implement an annual calendar year water audit program conforming to IWA/AWWA Water Audit Methodology (AWWA Water Loss Control Committee (WLCC) Water Audit Software) and corresponding guidance. The results of the first annual water audit shall be submitted to the Commission by March 31, 2013. Subsequent annual water audits shall be submitted annually to the Commission by March 31 every year thereafter.

m. The docket holder shall implement to the satisfaction of the Bureau of Watershed Management and PADEP, a continuous program to encourage water conservation in all types of use within the facilities served by this docket approval. The docket holder will report to the Bureau of Watershed Management, PADEP, on the actions taken pursuant to this program and the impact of those actions as requested by the PADEP.

n. No new water service connections shall be made to premises connected to sewerage systems which are not in compliance with all applicable effluent limits contained in State permits and the *Water Quality Regulations* of the Commission.

o. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

p. Within 30 days of completion of construction of the approved project, the docket holder is to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement (“Statement”) signed by the docket holder’s professional engineer for the project. The Statement must (a) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (b) report the project’s final construction cost as such cost is defined by the project review fee schedule in effect at the time application was made; and (c) indicate the date on which the project was (or is to be) placed in operation. In the event that the final project cost exceeds the estimated cost used by the applicant to calculate the DRBC project review fee, the statement must also include (d) the amount of any outstanding balance owed for DRBC review. Such outstanding balance will equal the difference between the fee paid to the Commission and the fee calculated on the basis of the project’s final cost, using the formula and definition of “project cost” set forth in the DRBC’s project review fee schedule in effect at the time application was made.

q. The area served by this project is limited to the service area as described above. Any expansion beyond this area is subject to review in accordance with Section 3.8 of the *Compact* and the *GWPAR*.

r. In potentially stressed subbasins, dockets and protected area permit applications for new or expanded ground water withdrawals must include one or more programs to mitigate the adverse impacts of the new or expanded ground water withdrawal. The eligible programs are noted below. If the remainder of the application and the program(s) submitted are acceptable, the withdrawal may be approved by the Commission for an initial three-year period. The applicant shall implement the program(s) immediately upon Commission approval. The project sponsor shall be required to continue the program(s) for the duration of the docket.

1. A conjunctive use program that demonstrates the docket holder's capability to obtain at least 15 percent of its average annual system usage from a reliable surface water supply. An acceptable program shall include either reservoir storage or an interconnection with a surface water supplier and an agreement or contract to purchase water from the supplier for the duration of the docket.

2. A water conservation program that exceeds the requirements of Section 7 in the *GWPAR*. For existing water utilities, the program shall reduce average annual per capita water usage by at least five percent. All conservation programs shall include water conservation

pricing; either inclining block rates, seasonal rates, or excess-use surcharges, and plumbing fixture rebate or retrofit components. For self-supplied users, the program shall include water efficient technologies such as recycling, reuse, xeriscaping, drip or micro irrigation, or other innovative technology approved by the Commission.

3. A program to monitor and control ground water infiltration to the receiving sewer system. The program must quantify ground water infiltration to the system and document reductions in infiltration. The program should include such measures as leakage surveys of sewer mains, metering of sewer flows in mains and interceptors, analysis of sewer system flows to quantify infiltration, and remedial measures such as repair of leaks and joints, main lining, and main replacement.

4. An artificial recharge or spray irrigation program that demonstrates a return of at least 60 percent of the total new or expanded annual withdrawal to the same ground water basin and aquifer system from which it is withdrawn. The program shall not impair ground water quality.

5. An alternative program approved by the Commission to mitigate the adverse impacts of the new or expanded ground water withdrawal.

s. A complete application for the renewal of this docket, or a notice of intent to cease the operations (withdrawal, discharge, etc.) approved by this docket by the expiration date, must be submitted to the DRBC at least 12 months prior to the expiration date below (unless permission has been granted by the DRBC for submission at a later date), using the appropriate DRBC application form. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to re-issue the docket before the expiration date below, the terms and conditions of this docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

t. The issuance of this docket approval shall not create any private or proprietary rights in the water of the Basin, and the Commission reserves the right to amend, alter or rescind any actions taken hereunder in order to insure the proper control, use and management of the water resources of the Basin.

u. If the monitoring required herein, or any other data or information demonstrates that the operation of this project significantly affects or interferes with any domestic or other existing wells or surface water supplies, or if the docket holder receives a complaint by any user of wells or surface water supplies within the zone of influence of the withdrawal, the docket holder shall immediately notify the Executive Director of any complaints by users of wells or

surface water supplies within the zone of influence of the withdrawal, and unless excused by the Executive Director, shall investigate such complaints. Any well or surface water supply which is substantially adversely affected, or rendered dry or otherwise unusable as a result of the docket holder's project withdrawal, shall be repaired, replaced or otherwise mitigated at the expense of the docket holder in accordance with Section 10B of the *GWPAR*. A report of investigation and/or mitigation plan prepared by a hydrologist shall be submitted to the Executive Director as soon as practicable. The Executive Director shall make the final determination regarding the validity of such complaints, the scope or sufficiency of such investigations, and the extent of appropriate mitigation measures, if required. The Executive Director may modify or suspend this docket approval, or require mitigating measures, pending additional review.

v. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

w. For the duration of any drought emergency declared by either Pennsylvania or the Commission, water service or use by the docket holder pursuant to this approval shall be subject to the prohibition of those nonessential uses specified by the Governor of Pennsylvania, the Pennsylvania Emergency Management Council, PADEP, or the Commonwealth Drought Coordinator, to the extent that they may be applicable, and to any other emergency resolutions or orders adopted hereafter by the Commission.

x. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

BY THE COMMISSION

DATE APPROVED: July 11, 2012

EXPIRATION DATE: July 11, 2022